

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

OIR

CRF Errors Corrected by the STIC Systems Branch

Serial Number:

09/920,677

ENTERED

CRF Processing Date:

9/12/2001

Edited by:

Verified by:

(STIC stat

☐ Changed a file from non-ASCII to ASCII☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.☐ Edited a format error in the Current Application Data section, specifically:☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other☐ Added the mandatory heading and subheadings for "Current Application Data".☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically:☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.☐ Inserted colons after headings/subheadings. Headings edited included:☒ Deleted extra, invalid, headings used by an applicant, specifically:☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as☐ Inserted mandatory headings, specifically:☐ Corrected an obvious error in the response, specifically:☐ Edited identifiers where upper case is used but lower case is required, or vice versa.☐ Corrected an error in the Number of Sequences field, specifically:☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.☐ Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a Patent bug). Sequences corrected:☐ Other:

Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95

#2

## RAW SEQUENCE LISTING

DATE: 09/12/2001

PATENT APPLICATION: US/09/920,677

TIME: 17:21:41

Input Set : A:\PTO.txt

Output Set: N:\CRF3\09122001\I920677.raw

```

6 <110> APPLICANT: Brett P. Monia
7      Lex M. Cowser
9 <120> TITLE OF INVENTION: ANTISENSE MODULATION OF P70 S6 KINASE EXPRESSION
11 <130> FILE REFERENCE: RTS-0245
C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/920,677
C--> 13 <141> CURRENT FILING DATE: 2001-08-01
13 <160> NUMBER OF SEQ ID NOS: 49
16 <210> SEQ ID NO: 1
17 <211> LENGTH: 20
18 <212> TYPE: DNA
19 <213> ORGANISM: Artificial Sequence
21 <220> FEATURE:
23 <223> OTHER INFORMATION: Antisense Oligonucleotide
25 <400> SEQUENCE: 1
26 tccgtcatcg ctcctcaggg                                20
29 <210> SEQ ID NO: 2
30 <211> LENGTH: 20
31 <212> TYPE: DNA
32 <213> ORGANISM: Artificial Sequence
34 <220> FEATURE:
36 <223> OTHER INFORMATION: Antisense Oligonucleotide
38 <400> SEQUENCE: 2
39 atgcattctg cccccaagga                                20
42 <210> SEQ ID NO: 3
43 <211> LENGTH: 2346
44 <212> TYPE: DNA
45 <213> ORGANISM: Homo sapiens
49 <220> FEATURE:
50 <221> NAME/KEY: CDS
51 <222> LOCATION: (28)...(1605)
53 <400> SEQUENCE: 3
54 gcacgaggct gcggcggggtc cgggccc atg agg cga cga agg agg cgg gac ggc      54
55                               Met Arg Arg Arg Arg Arg Arg Asp Gly
56                               1           5
58 ttt tac cca gcc ccg gac ttc cga gac agg gaa gct gag gac atg gca      102
59 Phe Tyr Pro Ala Pro Asp Phe Arg Asp Arg Glu Ala Glu Asp Met Ala
60 10           15           20           25
62 gga gtg ttt gac ata gac ctg gac cag cca gag gac gcg ggc tct gag      150
63 Gly Val Phe Asp Ile Asp Leu Asp Gln Pro Glu Asp Ala Gly Ser Glu
64           30           35           40
66 gat gag ctg gag gag ggg ggt cag tta aat gaa agc atg gac cat ggg      198
67 Asp Glu Leu Glu Glu Gly Gly Gln Leu Asn Glu Ser Met Asp His Gly
68           45           50           55
70 gga gtt gga cca tat gaa ctt ggc atg gaa cat tgt gag aaa ttt gaa      246
71 Gly Val Gly Pro Tyr Glu Leu Gly Met Glu His Cys Glu Lys Phe Glu
72           60           65           70
74 atc tca gaa act agt gtg aac aga ggg cca gaa aaa atc aga cca gaa      294

```

## RAW SEQUENCE LISTING

DATE: 09/12/2001

PATENT APPLICATION: US/09/920,677

TIME: 17:21:41

Input Set : A:\PTO.txt

Output Set: N:\CRF3\09122001\I920677.raw

```

75 Ile Ser Glu Thr Ser Val Asn Arg Gly Pro Glu Lys Ile Arg Pro Glu
76      75      80      85
78 tgt ttt gag cta ctt cgg gta ctt ggt aaa ggg ggc tat gga aag gtt      342
79 Cys Phe Glu Leu Leu Arg Val Leu Gly Lys Gly Gly Tyr Gly Lys Val
80  90      95      100      105
82 ttt caa gta cga aaa gta aca gga gca aat act ggg aaa ata ttt gcc      390
83 Phe Gln Val Arg Lys Val Thr Gly Ala Asn Thr Gly Lys Ile Phe Ala
84      110      115      120
86 atg aag gtg ctt aaa aag gca atg ata gta aga aat gct aaa gat aca      438
87 Met Lys Val Leu Lys Lys Ala Met Ile Val Arg Asn Ala Lys Asp Thr
88      125      130      135
90 gct cat aca aaa gca gaa cgg aat att ctg gag gaa gta aag cat ccc      486
91 Ala His Thr Lys Ala Glu Arg Asn Ile Leu Glu Glu Val Lys His Pro
92      140      145      150
94 ttc atc gtg gat tta att tat gcc ttt cag act ggt gga aaa ctc tac      534
95 Phe Ile Val Asp Leu Ile Tyr Ala Phe Gln Thr Gly Gly Lys Leu Tyr
96      155      160      165
98 ctc atc ctt gag tat ctc agt gga gga gaa cta ttt atg cag tta gaa      582
99 Leu Ile Leu Glu Tyr Leu Ser Gly Gly Glu Leu Phe Met Gln Leu Glu
100 170      175      180      185
102 aga gag gga ata ttt atg gaa gac act gcc tgc ttt tac ttg gca gaa      630
103 Arg Glu Gly Ile Phe Met Glu Asp Thr Ala Cys Phe Tyr Leu Ala Glu
104      190      195      200
106 atc tcc atg gct ttg ggg cat tta cat caa aag ggg atc atc tac aga      678
107 Ile Ser Met Ala Leu Gly His Leu His Gln Lys Gly Ile Ile Tyr Arg
108      205      210      215
110 gac ctg aag ccg gag aat atc atg ctt aat cac caa ggt cat gtg aaa      726
111 Asp Leu Lys Pro Glu Asn Ile Met Leu Asn His Gln Gly His Val Lys
112      220      225      230
114 cta aca gac ttt gga cta tgc aaa gaa tct att cat gat gga aca gtc      774
115 Leu Thr Asp Phe Gly Leu Cys Lys Glu Ser Ile His Asp Gly Thr Val
116      235      240      245
118 aca cac aca ttt tgt gga aca ata gaa tac atg gcc cct gaa atc ttg      822
119 Thr His Thr Phe Cys Gly Thr Ile Glu Tyr Met Ala Pro Glu Ile Leu
120 250      255      260      265
122 atg aga agt ggc cac aat cgt gct gtg gat tgg tgg agt ttg gga gca      870
123 Met Arg Ser Gly His Asn Arg Ala Val Asp Trp Trp Ser Leu Gly Ala
124      270      275      280
126 tta atg tat gac atg ctg act gga gca ccc cca ttc act ggg gag aat      918
127 Leu Met Tyr Asp Met Leu Thr Gly Ala Pro Pro Phe Thr Gly Glu Asn
128      285      290      295
130 aga aag aaa aca att gac aaa atc ctc aaa tgt aaa ctc aat ttg cct      966
131 Arg Lys Lys Thr Ile Asp Lys Ile Leu Lys Cys Lys Leu Asn Leu Pro
132      300      305      310
134 ccc tac ctc aca caa gaa gcc aga gat ctg ctt aaa aag ctg ctg aaa      1014
135 Pro Tyr Leu Thr Gln Glu Ala Arg Asp Leu Leu Lys Lys Leu Leu Lys
136      315      320      325
138 aga aat gct gct tct cgt ctg gga gct ggt cct ggg gac gct gga gaa      1062
139 Arg Asn Ala Ala Ser Arg Leu Gly Ala Gly Pro Gly Asp Ala Gly Glu

```

## RAW SEQUENCE LISTING

DATE: 09/12/2001

PATENT APPLICATION: US/09/920,677

TIME: 17:21:41

Input Set : A:\PTO.txt

Output Set: N:\CRF3\09122001\I920677.raw

```

140 330          335          340          345
142 gtt caa gct cat cca ttc ttt aga cac att aac tgg gaa gaa ctt ctg 1110
143 Val Gln Ala His Pro Phe Phe Arg His Ile Asn Trp Glu Glu Leu Leu
144          350          355          360
146 gct cga aag gtg gag ccc ccc ttt aaa cct ctg ttg caa tct gaa gag 1158
147 Ala Arg Lys Val Glu Pro Pro Phe Lys Pro Leu Leu Gln Ser Glu Glu
148          365          370          375
150 gat gta agt cag ttt gat tcc aag ttt aca cgt cag aca cct gtc gac 1206
151 Asp Val Ser Gln Phe Asp Ser Lys Phe Thr Arg Gln Thr Pro Val Asp
152          380          385          390
154 agc cca gat gac tca act ctc agt gaa agt gcc aat cag gtc ttt ctg 1254
155 Ser Pro Asp Asp Ser Thr Leu Ser Glu Ser Ala Asn Gln Val Phe Leu
156          395          400          405
158 ggt ttt aca tat gtg gct cca tct gta ctt gaa agt gtg aaa gaa aag 1302
159 Gly Phe Thr Tyr Val Ala Pro Ser Val Leu Glu Ser Val Lys Glu Lys
160 410          415          420          425
162 ttt tcc ttt gaa cca aaa atc cga tca cct cga aga ttt att ggc agc 1350
163 Phe Ser Phe Glu Pro Lys Ile Arg Ser Pro Arg Arg Phe Ile Gly Ser
164          430          435          440
166 cca cga aca cct gtc agc cca gtc aaa ttt tct cct ggg gat ttc tgg 1398
167 Pro Arg Thr Pro Val Ser Pro Val Lys Phe Ser Pro Gly Asp Phe Trp
168          445          450          455
170 gga aga ggt gct tcg gcc agc aca gca aat cct cag aca cct gtg gaa 1446
171 Gly Arg Gly Ala Ser Ala Ser Thr Ala Asn Pro Gln Thr Pro Val Glu
172          460          465          470
174 tac cca atg gaa aca agt ggc ata gag cag atg gat gtg aca atg agt 1494
175 Tyr Pro Met Glu Thr Ser Gly Ile Glu Gln Met Asp Val Thr Met Ser
176          475          480          485
178 ggg gaa gca tcg gca cca ctt cca ata cga cag ccg aac tct ggg cca 1542
179 Gly Glu Ala Ser Ala Pro Leu Pro Ile Arg Gln Pro Asn Ser Gly Pro
180 490          495          500          505
182 tac aaa aaa caa gct ttt ccc atg atc tcc aaa cgg cca gag cac ctg 1590
183 Tyr Lys Lys Gln Ala Phe Pro Met Ile Ser Lys Arg Pro Glu His Leu
184          510          515          520
186 cgt atg aat cta tga cagagcaatg cttttaatga atttaaggca aaaaggtgga 1645
187 Arg Met Asn Leu
188          525
190 gagggagatg tgtgagcatc ctgcaagggtg aaacaagact caaaatgaca gtttcagaga 1705
192 gtcaatgtca ttacatagaa cacttcggac acaggaaaaa taaacgtgga ttttaaaaaa 1765
194 tcaatcaatg gtgcaaaaaa aaacttaaaag caaaatagta ttgctgaact cttaggcaca 1825
196 tcaattaatt gattcctcgc gacatctttc tcaaccttat caaggatttt catgttgatg 1885
198 actcgaaaact gacagtatta agggtaggat gttgctctga atcactgtga gtctgatgtg 1945
200 tgaagaaggg tatcctttca ttaggcaagt acaaattgcc tataatactt gcaactaagg 2005
202 acaaattagc atgcaagctt ggtcaaactt ttcccaggca aaatgggaag gcaaagacaa 2065
204 aagaaactta ccaattgatg ttttacgtgc aaacaacctg aatctttttt ttatataaat 2125
206 atatatTTTT caaatagatt tttgattcag ctcatatatga aaaacatccc aaactttaaa 2185
208 atgcgaaaatt attggttggt gtgaagaaaag ccagacaaact tctgtttctt ctcttggtga 2245
210 aataataaaa tgcaaatgaa tcattgttaa cacagctgtg gctcgtttga gggattgggg 2305
212 tggacctggg gtttatTTTc agtaaccag ctgcggagcc t 2346

```

## RAW SEQUENCE LISTING

DATE: 09/12/2001

PATENT APPLICATION: US/09/920,677

TIME: 17:21:41

Input Set : A:\PTO.txt

Output Set: N:\CRF3\09122001\I920677.raw

```

215 <210> SEQ ID NO: 4
216 <211> LENGTH: 24
217 <212> TYPE: DNA
218 <213> ORGANISM: Artificial Sequence
220 <220> FEATURE:
222 <223> OTHER INFORMATION: PCR Primer
224 <400> SEQUENCE: 4
225 attgctgaac tcttaggcac atca 24
228 <210> SEQ ID NO: 5
229 <211> LENGTH: 24
230 <212> TYPE: DNA
231 <213> ORGANISM: Artificial Sequence
233 <220> FEATURE:
235 <223> OTHER INFORMATION: PCR Primer
237 <400> SEQUENCE: 5
238 tgtcagtttc gagtcacaa catg 24
241 <210> SEQ ID NO: 6
242 <211> LENGTH: 32
243 <212> TYPE: DNA
244 <213> ORGANISM: Artificial Sequence
246 <220> FEATURE:
248 <223> OTHER INFORMATION: PCR Probe
250 <400> SEQUENCE: 6
251 ctgcgcacat ctttctcaac cttatcaagg at 32
254 <210> SEQ ID NO: 7
255 <211> LENGTH: 19
256 <212> TYPE: DNA
257 <213> ORGANISM: Artificial Sequence
259 <220> FEATURE:
261 <223> OTHER INFORMATION: PCR Primer
263 <400> SEQUENCE: 7
264 gaaggtgaag gtcggagtc 19
267 <210> SEQ ID NO: 8
268 <211> LENGTH: 20
269 <212> TYPE: DNA
270 <213> ORGANISM: Artificial Sequence
272 <220> FEATURE:
274 <223> OTHER INFORMATION: PCR Primer
276 <400> SEQUENCE: 8
277 gaagatggtg atgggatttc 20
280 <210> SEQ ID NO: 9
281 <211> LENGTH: 20
282 <212> TYPE: DNA
283 <213> ORGANISM: Artificial Sequence
285 <220> FEATURE:
287 <223> OTHER INFORMATION: PCR Probe
289 <400> SEQUENCE: 9
290 caagcttccc gttctcagcc 20
293 <210> SEQ ID NO: 10

```

## RAW SEQUENCE LISTING

DATE: 09/12/2001

PATENT APPLICATION: US/09/920,677

TIME: 17:21:41

Input Set : A:\PTO.txt

Output Set: N:\CRF3\09122001\I920677.raw

```

294 <211> LENGTH: 20
295 <212> TYPE: DNA
296 <213> ORGANISM: Artificial Sequence
298 <220> FEATURE:
300 <223> OTHER INFORMATION: Antisense Oligonucleotide
302 <400> SEQUENCE: 10
303 ggacccgccc cagcctcgtg 20
306 <210> SEQ ID NO: 11
307 <211> LENGTH: 20
308 <212> TYPE: DNA
309 <213> ORGANISM: Artificial Sequence
311 <220> FEATURE:
313 <223> OTHER INFORMATION: Antisense Oligonucleotide
315 <400> SEQUENCE: 11
316 tgggcccggg cccgccgcag 20
319 <210> SEQ ID NO: 12
320 <211> LENGTH: 20
321 <212> TYPE: DNA
322 <213> ORGANISM: Artificial Sequence
324 <220> FEATURE:
326 <223> OTHER INFORMATION: Antisense Oligonucleotide
328 <400> SEQUENCE: 12
329 catgggcccg gacccgccgc 20
332 <210> SEQ ID NO: 13
333 <211> LENGTH: 20
334 <212> TYPE: DNA
335 <213> ORGANISM: Artificial Sequence
337 <220> FEATURE:
339 <223> OTHER INFORMATION: Antisense Oligonucleotide
341 <400> SEQUENCE: 13
342 ctcatggggc cggacccgcc 20
345 <210> SEQ ID NO: 14
346 <211> LENGTH: 20
347 <212> TYPE: DNA
348 <213> ORGANISM: Artificial Sequence
350 <220> FEATURE:
352 <223> OTHER INFORMATION: Antisense Oligonucleotide
354 <400> SEQUENCE: 14
355 gcctcatggg cccggacccg 20
358 <210> SEQ ID NO: 15
359 <211> LENGTH: 20
360 <212> TYPE: DNA
361 <213> ORGANISM: Artificial Sequence
363 <220> FEATURE:
365 <223> OTHER INFORMATION: Antisense Oligonucleotide
367 <400> SEQUENCE: 15
368 tcgcctcatg ggcccggacc 20
371 <210> SEQ ID NO: 16
372 <211> LENGTH: 20

```

VERIFICATION SUMMARY

DATE: 09/12/2001

PATENT APPLICATION: US/09/920,677

TIME: 17:21:42

Input Set : A:\PTO.txt

Output Set: N:\CRF3\09122001\I920677.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date